

REMARKS/ARGUMENTS

In response to the Office Action dated November 19, 2003, please consider the following remarks.

In the Office Action issued November 19, 2003, claims 1 and 7-21 were rejected under 35 U.S.C. §112, ¶2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 7-21 were rejected under 35 U.S.C. §102(b) as being anticipated by a printed publication *Spatial Quadtree Indexing*, Oracle Spatial User's Guide and Reference for Oracle Release 8.1.6. Claims 2-6 were objected to as being in improper form. Claim 19 was objected to due to informalities. The drawings were objected to due to lack of descriptive textual labels in Figs. 1 and 6 and due to partial views in Figs. 1 and 6.

Claims 1, 4, and 7-24 are now pending in this application. Claims 1, 4, 17, 18, 19, 20 and 21 have been amended to more particularly point out the subject matter that the inventor considers to be the invention, to overcome the rejections under 35 U.S.C. §112, ¶2, and to overcome the objections. Claims 2, 3, 5, and 6 have been cancelled. New claims 22-24 have been added. Corrections to Figs. 1a-c and 6a-h have been submitted.

Regarding the objections to the drawings, replacement drawing sheets have been submitted, which are believed to overcome the objections. Descriptive textual labels have been added to Figs. 1a-c and Figs. 6a-h. Regarding the objection due

to partial views, Applicant believes that each figure of Figs. 1a-c and Figs. 6a-h shows a complete view of each item shown, rather than each figure showing a part of a larger item.

Regarding the objection to claim 19, the claim has been amended as required by the examiner. Regarding the objections to claims 2-6, claims 2, 3, 5, and 6 have been cancelled and claim 4 has been amended to correct the dependency.

Regarding the rejection of claim 1 under U.S.C. §112, ¶2, the claim has been amended to more particularly point out the subject matter that the inventor considers to be the invention. Regarding the rejection of claims 17 and 18 under U.S.C. §112, ¶2, the claims have been amended to provide the proper antecedent basis. Accordingly, it is believed that the rejections of claims 1 and 7-21 under U.S.C. §112, ¶2 have been overcome.

The applicant respectfully submits that the present invention, according to claims 1 and 7-21, as well as claims 4 and 22-24, are not anticipated by the printed publication *Spatial Quadtree Indexing*, Oracle Spatial User's Guide and Reference for Oracle Release 8.1.6 (*Spatial Quadtree Indexing*). *Spatial Quadtree Indexing* discloses a two-tier query model in which primary and secondary filter operations are performed. The primary filter compares geometry approximations (tiles) to reduce computation complexity and is considered a lower cost filter. Because the primary filter compares geometric approximations, it returns a superset of the

result set. The secondary filter applies exact computations to geometries that result from the primary filter. The secondary filter yields an accurate answer to a spatial query. The secondary filter operation is computationally expensive, but it is only applied to the primary filter results, not the entire data set. (see page 1-6). *Spatial Quadtree Indexing* discloses performing the secondary filter operation on the entire result set of the primary filter operation. Further, *Spatial Quadtree Indexing* does not disclose or suggest identifying geometry approximations (tiles) as interior or boundary tiles.

By contrast, the present invention, for example, according to claim 1, requires determining a distribution of the objects with respect to the tiles by identifying as interior tiles those tiles that intersect the object while all of a boundary of the object lies outside the interior tiles and by identifying as boundary tiles those tiles that intersect a boundary of the object. *Spatial Quadtree Indexing* does not disclose or suggest identifying geometry approximations (tiles) as interior or boundary tiles.

The present invention, for example, according to claim 1, further requires identifying a first object as fulfilling a primary filter condition with respect to a second object if at least one tile of the first object intersects with at least one tile of the second object and identifying the first object as fulfilling a secondary filter condition with respect to the second object if the at least one tile of the second object with which the at least one tile of the first object intersects is an interior tile

of the second object. *Spatial Quadtree Indexing* discloses performing the secondary filter operation on the entire result set of the primary filter operation. *Spatial Quadtree Indexing* does not disclose or suggest identifying an object as fulfilling a secondary filter condition with respect to the second object if the at least one tile of the second object with which the at least one tile of the first object intersects is an interior tile of the second object. This means that the secondary filter operation is not performed on the entire result set of the primary filter.

Thus, the present invention, according to claims 1 and claims 20 and 21, which are similar to claim 1, and according to claims 4 and 7-24, , which depend from claims 1, 20, or 21, is not anticipated by *Spatial Quadtree Indexing*.

The present invention, according to claims 22-24, is not anticipated by *Spatial Quadtree Indexing* for the additional reason that claim 22-24 require determining whether the first object fulfills a secondary filter condition with respect to the second object by mathematically comparing a geometry of the first object with a geometry of the second object if none of the tiles of the second object that intersect with the at least one tile of the first object is an interior tile of the second object. *Spatial Quadtree Indexing* discloses performing the secondary filter operation on the entire result set of the primary filter operation. *Spatial Quadtree Indexing* does not disclose or suggest applying the secondary filter condition only to the subset of objects for which none of tiles of the second object

that intersect with the at least one tile of the first object is an interior tile of the second object.

Thus, the present invention, according to claims 22-24, is not anticipated by *Spatial Quadtree Indexing*.

Each of the claims now pending in this application is believed to be in condition for allowance. Accordingly, favorable reconsideration of this case and early issuance of the Notice of Allowance are respectfully requested.

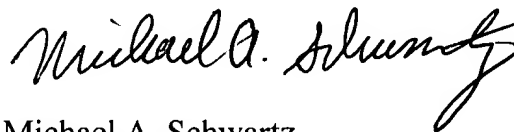
Additional Fees:

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with this application to Deposit Account No. 19-5127 (19111.0037).

Conclusion

In view of the foregoing, all of the Examiner's rejections to the claims are believed to be overcome. The Applicants respectfully request reconsideration and issuance of a Notice of Allowance for all the claims remaining in the application. Should the Examiner feel further communication would facilitate prosecution, he is urged to call the undersigned at the phone number provided below.

Respectfully Submitted,



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